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Concrete House Withstands Katrina's Might

Six hours of wind fail to move concrete home.

Bay St. Louis, Miss. (February 27, 2007) When Katrina threatened the gulf coast of Mississippi, Ed and Ilene Catoire evacuated. Katrina was the third hurricane Ed had experienced, and he knew enough to leave.

The Catoire's one-story 2,490 square-foot house was built four miles from the gulf coast, but that wasn't far enough. When Katrina's storm surge hit the Bay of St. Louis, it pushed a 10.5-foot wall of water inland, destroying the houses the wind hadn't yet blown away.

After the wind subsided and the main roads reopened, Ed drove back to Bay St. Louis to see what was left of his home. When he arrived, a police officer told Ed to turn around. There were no houses left standing in the area, according to the officer. But Ed said he wanted to see for himself. "We literally cut our way back there with chain saws," Catoire said. On their way they could see the storm's destruction. The frame houses were just gone. The brick houses had shifted off their foundations.

"The only homes intact were the 30 in our subdivision. All the houses were built to meet hurricane codes enacted in 2000, and many of those were built with Reward Wall Systems and other ICF systems," he said.

The Catoire's windows and doors were blown out by winds that ranged from 175 to 225 miles per hour for six hours as the eye of the hurricane passed directly over Bay St. Louis, but the walls were undamaged.

"I had faith the structure would withstand the wind, but I didn't know how it would be affected by the water," Catoire said. "The outside walls were sound and undamaged, but the roof had substantial damage from the nine trees that fell on the house," he added. From the outside, the house looked like it could be lived in, but the rising waters put more than 10 feet of water into the house damaging the interior walls.

"We lost all of the interior of the house," Catoire said. The water rose above the doorframes and soaked the sheetrock, causing walls to collapse. Water leaks resulting from roof damage caused the ceilings to collapse. The Catoires removed all the interior walls and finishes to the polystyrene, and replaced them. The exterior stucco finish was damaged by trees being blown into the house, so it also was replaced.

Built in 2000 by Art Young Lifestyle 2000, the home cost about \$20,000 more to build than conventional wood construction at that time. But according to Catoire the additional up-front cost was “worth it”. Katrina moved many of the wood and brick structures in the area off their foundations, even though they were built to meet the hurricane code. He also noted that the frame houses with stucco exteriors received mold damage. But mold didn’t grow on the ICF houses.

According to Reward Wall Vice President of Engineering and Technical Services Kelvin Doerr, P.E., mold needs three things to grow: moisture, “food” and the correct temperature. Concrete and expanded polystyrene are not food sources for mold and the concrete’s temperature is typically lower than the level molds need to grow. Because of the strength of the concrete and its resistance to mold, ICFs are excellent choices for home construction in humid areas like the Gulf Coast.

Of the 30 homes in the subdivision about half the families have returned and are living in their homes or about to move back in. Neighboring subdivisions are not so fortunate. Concrete slabs or pylons mark most home sites and many residents are living in tiny FEMA trailers.

Ed and Ilene Catoire moved back into their home on February 1, 2007, 17 months after Katrina displaced them. Ed is grateful the Reward Wall ICFs “did what they were supposed to do.”

They withstood the winds of Katrina.

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